

REMARKS/ARGUMENTS

The Examiner objected to the declaration that was submitted in the present case. The assignee of interest is in the process of obtaining a new declaration executed by each of the inventors. The executed declaration will be submitted upon receipt.

The present amendment is being submitted with a Request for Continued Examination in response to the final Office action dated January 2, 2004. In the Office action, the Examiner rejected claims pending claims 1-29, 31, 32, 35 and 36 under 35 U.S.C. §103(a) as being unpatentable over various combinations, including the recently cited reference of Tobias. In a previous Office action, the Examiner rejected the claims based on the Solgaard, Stafford, Braun and Saunderson references. In response to that action, the Applicants pointed out that none of the previously cited references disclosed an optical apparatus including an *array* of optical detectors, as recited in the claimed invention, which allowed the apparatus to monitor certain spectral channels concurrently and others in a time division multiplexed manner. These advantages are discussed for example in paragraphs [0023] and [0025] of the pending application. The Examiner cited Tobias for its disclosure of an array of detectors, and suggested that the proposed combinations would obviate the claimed inventions.

Applicants' undersigned attorney discussed the shortcomings of the proposed combinations in an interview with the Examiner on April 7, 2004. Applicants' undersigned attorney and the Examiner agreed that the respective combinations of prior art did not suggest or teach an optical apparatus and method with the capability to perform both concurrent detection and sequential (e.g., time-division-multiplexed) detection. Applicants submitted proposed claims that clarified these distinctions. In a subsequent telephone conference, the Examiner agreed that these proposed claims clarified the novel capability discussed in the interview. These amendments have been included in the listing of claims presented herewith. (The language of claims 18, 32 and 36 has been slightly modified in this amendment for purposes of clarity. Namely, the language "groups of" was changed to "some of".) Below Applicants present a brief discussion of the various rejections and how they have been overcome.

Solgaard in view of Tobias

The Examiner rejected claims 1-4, 7-11, 32 and 35 as unpatentable over Solgaard in view of Tobias. Tobias was cited for its disclosure of multiple detectors, i.e., “array detectors”. Namely, the Examiner asserted that it would be obvious to combine the array detectors of Tobias with the multiplexed system of Solgaard to provide the claimed inventions. Applicants respectfully assert that this proposed combination cannot obviate any of the pending claims.

First, Applicants assert that the proposed combination is improper. The Solgaard invention is particularly concerned with non-visible wavelengths (i.e., 1.55 microns and 1.3 microns). (Solgaard, col. 8, lines 47-54). For these wavelengths, Solgaard specifically teaches away from using arrays, such as those disclosed in Tobias, because array technology is “immature” and “more costly and unreliable ...” for the relevant wavelengths. (Solgaard, col. 8, lines 47-58). Therefore, one skilled in the art would not be motivated to combine the arrays of Tobias with the invention of Solgaard in the suggested manner.

Moreover, while Tobias teaches using array detectors for certain situations, it *expressly teaches away from using array detectors to provide both multiplexed and concurrent detection*, as provided and discussed in the present invention. Particularly, Tobias teaches that by using “parallel rather than sequential data acquisition” various advantages can be achieved, such as rapid acquisition of the “complete spectrum”, “enhanced signal-to-noise ratio” and elimination of “moving parts”, “resulting in reduced cost and improved life and stability.” (Tobias, col. 4, lines 43-50). The express goal of eliminating moving parts directly contradicts the claimed inventions that employ individually controllable beam manipulating elements to provide both concurrent and sequential detection. When performance, simplicity and reliability are the main goals, Tobias teaches that array detectors can be employed in a parallel detection system. Alternatively, Tobias teaches using a “chopper wheel” to provide an “inexpensive” single detector system. (See e.g., Tobias, col. 6, lines 3-42). Thus, Tobias teaches using *either* an array of detectors for performance considerations, *or alternatively*, using a single detector and chopper wheel for an inexpensive solution. Tobias does not contemplate or suggest (and in fact teaches

away from) using both sequential and parallel detection schemes. Therefore, Applicants assert that the proposed combination is improper.

Finally, even if the array of Tobias were combined with Solgaard, there is no suggestion that it should be used to provide both sequential and concurrent detection. Thus, even if the combination were made, it would not provide a system that would perform both concurrent and sequential detection.

For all of these reasons, Applicants respectfully assert that claims 1-4, 7-11, 32 and 35, as amended, are patentable over Solgaard in view of Tobias..

Solgaard in view of Tobias and Braun

The Examiner rejected claims 18-21, 24-29, 31 and 36 as unpatentable over Solgaard in view of Tobias and Braun. Braun was cited for its ability to handle input signals with orthogonal polarizations. Applicants incorporate by reference the arguments made above with respect to the combination of Solgaard and Tobias. Particularly, Applicants assert that the combination is improper because the references teach away from the proposed combination. Furthermore, even if the combination could be made it would not provide a system having the capability for both concurrent and sequential detection.

For all of these reasons, Applicants respectfully assert that claims 18-21, 24-29, 31 and 36, as amended, are patentable over Solgaard in view of Tobias and Braun.

Solgaard in view of Tobias and Saunderson

The Examiner rejected claims 12-17 as unpatentable over Solgaard in view of Tobias and Saunderson. Saunderson was cited for its disclosure of a reference signal and reference position-sensing element. Applicants incorporate by reference the arguments made above with respect to the combination of Solgaard and Tobias. Particularly, Applicants assert that the combination is improper because the references teach away from the proposed combination. Furthermore, even

if the combination could be made it would not provide a system having the capability for both concurrent and sequential detection.

For all of these reasons, Applicants respectfully assert that claims 12-17, as amended, are patentable over Solgaard in view of Tobias and Saunderson.

Stafford in view of Tobias

The Examiner rejected claims 1-7, 32 and 35 as unpatentable over Stafford in view of Tobias. Tobias was cited for its disclosure of multiple detectors, i.e., "array detectors". Namely, the Examiner asserted that it would be obvious to combine the array detectors of Tobias with the multiplexed system of Stafford to provide the claimed inventions. Applicants respectfully assert that this proposed combination cannot obviate any of the pending claims.

First, Applicants assert that the proposed combination is improper. Stafford expressly indicates that a detector that is employed in should preferably be "as linear as possible over as wide a wavelength range as possible, to provide a broadband spectrometer." (Stafford, col. 5, lines 19-22). Thus, Stafford teaches toward using a single detector with a linear response, and teaches away from using an array type detector such as that used in Tobias. Therefore, one skilled in the art would not be motivated to combine the arrays of Tobias with Stafford in the suggested manner.

Moreover, while Tobias teaches using array detectors for certain situations, it *expressly teaches away from using array detectors to both multiplexed and concurrent detection*, as provided and discussed in the present invention. Particularly, Tobias teaches that by using "parallel rather than sequential data acquisition" various advantages can be achieved, such as rapid acquisition of the "complete spectrum", "enhanced signal-to-noise ratio" and elimination of "moving parts", "resulting in reduced cost and improved life and stability." (Tobias, col. 4, lines 43-50). The express goal of eliminating moving parts directly contradicts the claimed inventions that employ individually controllable beam manipulating elements to provide both concurrent and sequential detection. When performance and reliability are the main goals, Tobias teaches that array detectors can be employed in a parallel detection system. Alternatively, Tobias teaches using a "chopper wheel" to provide an "inexpensive" single detector system. (See e.g.,

Tobias, col. 6, lines 3-42). Thus, Tobias teaches using *either* an array of detectors for performance considerations, *or alternatively*, using a single detector and chopper wheel for an inexpensive solution. Tobias does not contemplate or suggest (and in fact teaches away from) using both sequential and parallel detection schemes. Therefore, Applicants assert that the proposed combination is improper.

Finally, even if the array of Tobias were combined with Stafford, there is no suggestion that it should be used to provide both sequential and concurrent detection. Thus, even if the combination were made, it would not provide a system that could perform both concurrent and sequential detection.

For all of these reasons, Applicants respectfully assert that claims 1-7, 32 and 35, as amended, are patentable over Solgaard in view of Tobias.

Stafford in view of Tobias and Braun

The Examiner rejected claims 18-27, 29 and 36 as unpatentable over Stafford in view of Tobias and Braun. Braun was cited for its ability to handle input signals with orthogonal polarizations. Applicants incorporate by reference the arguments made above with respect to the combination of Stafford and Tobias. Particularly, Applicants assert that the combination is improper because the references teach away from the proposed combination. Furthermore, even if the combination could be made it would not provide a system having the capability for both concurrent and sequential detection.

For all of these reasons, Applicants respectfully assert that claims 18-27, 29 and 36, as amended, are patentable over Stafford in view of Tobias and Braun.

CONCLUSIONS

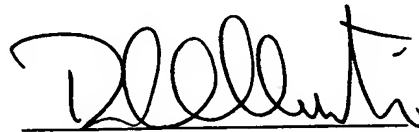
Applicants' inventions as set forth in the amended claims are both novel and nonobvious over the prior art for the reasons set forth above.

For all of these reasons, Applicants respectfully assert that all pending claims 1-29, 31, 32, 35 and 36 are in condition for allowance. The Examiner's early reconsideration is respectfully requested. If the Examiner has any questions, the Examiner is invited to contact Applicants' attorney at the following address or telephone number:

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Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'D. Alberti', written over a horizontal line.

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